

## PROJECT INFORMATION

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS

SITE ADDRESS: 425 BROADWAY  
SOMERVILLE, MA 02145

LATITUDE: N 42.3961° 42° 23' 45.96" N  
LONGITUDE: W -71.0997° -71° 05' 58.92" W

JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

NOC# 800-638-2822



SITE NUMBER: MA2231

SITE NAME: SOMERVILLE 425 BROADWAY (MA0022)

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DIRECTIONS TO SITE:

START OUT GOING SOUTHWEST ON COCHITUATE RD / MA-30 W TOWARD WHITTIER ST. 0.2 MI, MAKE A U-TURN AT WHITTIER ST ONTO COCHITUATE RD(RT-30 E) - 0.3 MI, TAKE RAMP ONTO I-90 E TOWARD BOSTON/MASS PIKE ENTRANCE/JCT I-95 (TOLL APPLIES) - 18.2 MI, TAKE LEFT EXIT #24 A-B-C/QUINCY/S. STATION/CONCORD NH ONTO I-93 N TOWARD #24C-B/#24B/24C-B/CONCORD NH (TOLL APPLIES) - 4.0 MI, TAKE EXIT #29/SOMERVILLE (RT-28)/EVERETT (RT-38) ONTO MYSTIC AVE(RT-38 N) TOWARD MC GRATH HWY (RT-28)/SOMERVILLE - 0.3 MI, MAKE A SHARP LEFT TURN ON MYSTIC AVE(RT-38 S), TURN RIGHT ON FELLSWAY W - 0.3 MI, TURN RIGHT ON BROADWAY - 0.5 MI, BEAR RIGHT ON BROADWAY - 0.1 MI, ARRIVE AT 425 BROADWAY, SOMERVILLE, ON THE RIGHT.



MAP DATA 2012 GOOGLE

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

2. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

- 3.

3 WORKING DAYS



BEFORE YOU DIG



CALL TOLL FREE 888-DIG-SAFE

UNDERGROUND SERVICE ALERT

*Daniel P. Hamm*

REGISTERED PROFESSIONAL ENGINEER  
No. 40720

AT&amp;T

TITLE SHEET  
(LTE)

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/20/13	ISSUED FOR CONSTRUCTION	SG	AT	DPH
A	12/08/13	ISSUED FOR REVIEW	SG	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: SG

JOB NUMBER	DRAWING NUMBER	REV
2231.01	T-1	1



1600 OSGOOD STREET  
BUILDING 20 NORTH, SUITE 309D  
N. ANDOVER, MA 01845

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FAX: (978) 326-5586



27 NORTHWESTERN DR.  
SALEM, NH 03079

SITE NUMBER: MA2231  
SITE NAME: SOMERVILLE 425  
BROADWAY (MA0022)

425 BROADWAY  
SOMERVILLE, MA 02145  
MIDDLESEX COUNTY



550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701



GROUNDING NOTES		GENERAL NOTES	
<p>1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.</p> <p>2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.</p> <p>3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.</p> <p>4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.</p> <p>5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.</p> <p>6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.</p> <p>7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.</p> <p>8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.</p> <p>9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.</p> <p>10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.</p> <p>11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.</p> <p>12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50</p>		<p>1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY: CONTRACTOR - SAI SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION) OWNER - AT&amp;T MOBILITY</p> <p>2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.</p> <p>3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.</p> <p>4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.</p> <p>5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.</p> <p>6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.</p> <p>7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.</p> <p>8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.</p> <p>9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.</p> <p>10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.</p> <p>11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.</p> <p>12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.</p> <p>13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.</p> <p>14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.</p> <p>15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.</p> <p>16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&amp;T MOBILITY SITES."</p> <p>17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.</p> <p>18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.</p> <p>19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.</p> <p>20. APPLICABLE BUILDING CODES: SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN. BUILDING CODE: 2009 IBC WITH MASSACHUSETTS 780 CMR 8TH EDITION ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS LIGHTNING CODE: REFER TO ELECTRICAL DRAWINGS</p> <p>SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:</p> <p>AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;</p> <p>AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, THIRTEENTH EDITION;</p> <p>TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL</p> <p>ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.</p> <p>FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.</p>	



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27 NORTHWESTERN DR.  
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SITE NUMBER: MA2231  
SITE NAME: SOMERVILLE 425  
BROADWAY (MA0022)  
425 BROADWAY  
SOMERVILLE, MA 02145  
MIDDLESEX COUNTY



550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

1	12/20/13	ISSUED FOR CONSTRUCTION	SG	AT	DPH
A	12/06/13	ISSUED FOR REVIEW	SG	AT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: SG		

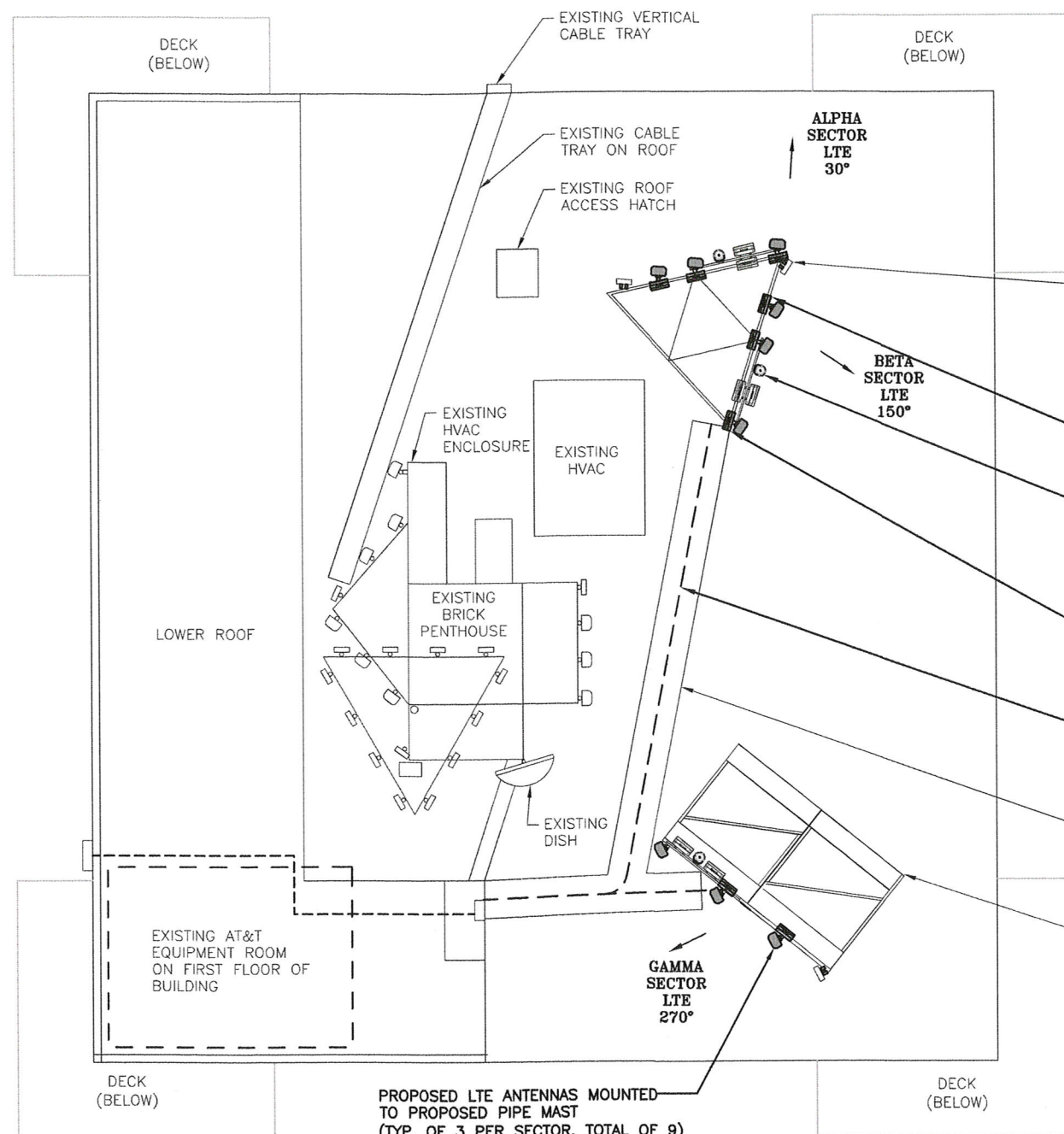
ABBREVIATIONS			
AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS
BCW	BARE COPPER WIRE	MIN	MINIMUM
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW
EXISTING	EXISTING	N.T.S.	NOT TO SCALE
EG	EQUIPMENT GROUND	REF	REFERENCE
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED
RF	RADIO FREQUENCY	TBD	TO BE DETERMINED
TBR	TO BE REMOVED	TBRR	TO BE REMOVED AND REPLACED
TYP	TYPICAL		



AT&T  
GENERAL NOTES  
(LTE)

JOB NUMBER	DRAWING NUMBER	REV
2231.01	GN-1	1





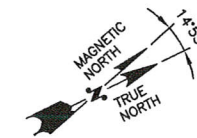
# ROOF PLAN

SCALE: 3/16" = 1'-0"

0' 2'-8" 5'-4" 10'-8" 16'-0"

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



EXISTING (2) UMTS/GSM & (1) LTE ANTENNA, (1) UMTS/GSM TO REMAIN, (1) UMTS/GSM & (1) LTE ANTENNA TO BE REMOVED & REPLACED WITH NEW ANTENNAS (PER SECTOR)  
PROPOSED RRH MOUNTED ON UNISTRUT TO ANTENNA MOUNTING PIPE (TYP. OF 4 PER SECTOR, TOTAL OF 12)  
PROPOSED SURGE ARRESTOR DC6-48-60-18-8F MOUNTED ON UNISTRUT (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REPLACE EXISTING DC6-48-60-0-9E SURGE SUPPRESSOR)

PROPOSED A2 MODULE MOUNTED ON PROPOSED RRH (TYP. OF 2 PER SECTOR, TOTAL OF 6)

EXISTING (12) 1-5/8" AT&T CABLE (6 TO REMAIN) (6 TO BE REMOVED)

EXISTING CABLE TRAY ON ROOF

EXISTING BALLAST FRAME ON ROOF

PROPOSED LTE ANTENNAS MOUNTED TO PROPOSED PIPE MAST (TYP. OF 3 PER SECTOR, TOTAL OF 9) (1 EXISTING UMTS/GSM ANTENNA & 1 EXISTING LTE ANTENNA TO BE REMOVED & REPLACED WITH NEW ANTENNAS) (PER SECTOR)

BROADWAY

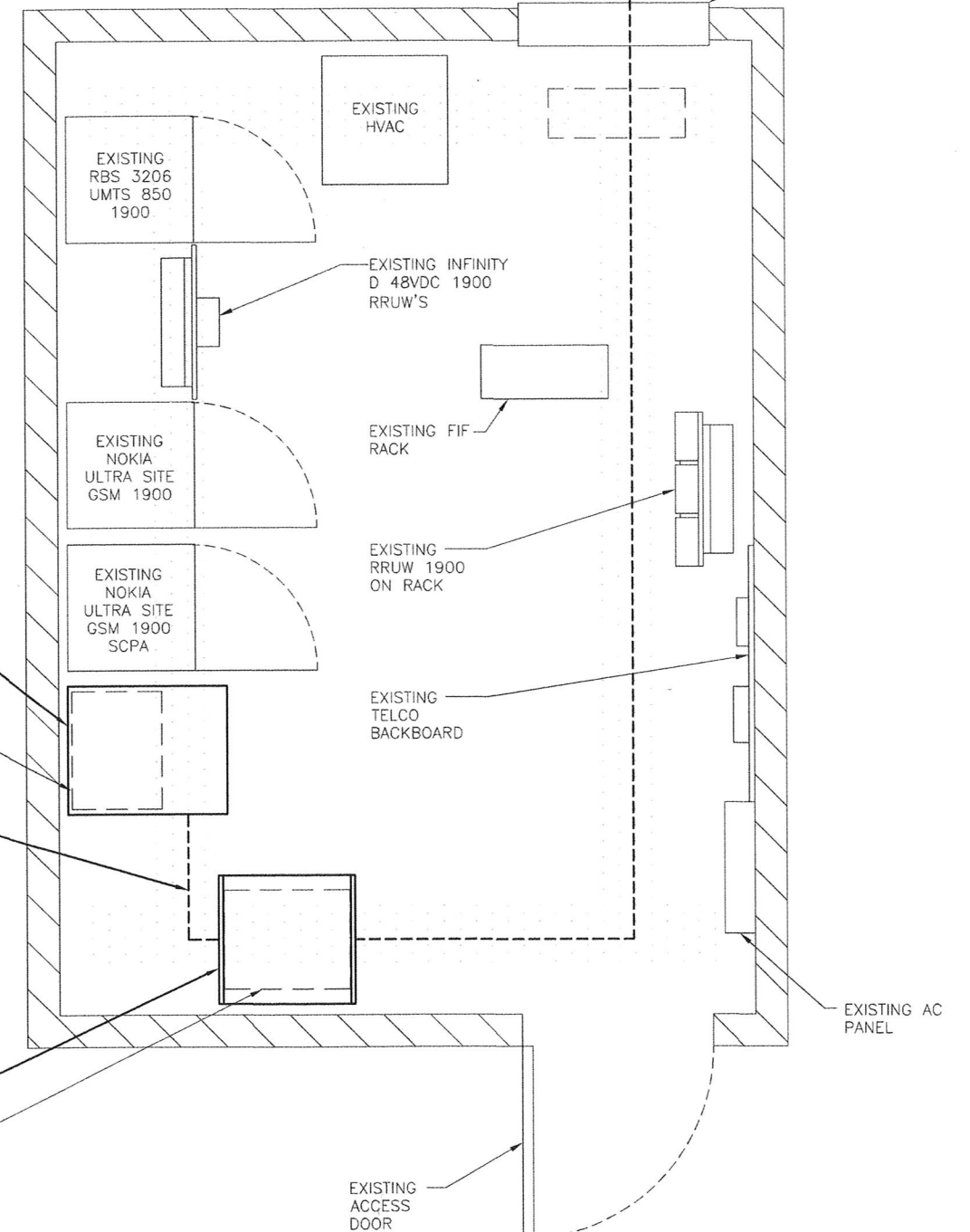
PROPOSED DC POWER PLANT (TO REPLACE EXISTING)

EXISTING DC PLANT (TO BE REMOVED & REPLACED)

PROPOSED DC POWER IN OVERHEAD RACK

PROPOSED RX/IT CABINET

EXISTING BBU (TO BE REMOVED)



# EQUIPMENT PLAN

SCALE: 3/4" = 1'-0"

0' 0'-8" 1'-4" 2'-8" 4'-0"



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SALEM, NH 03079

SITE NUMBER: MA2231  
SITE NAME: SOMERVILLE 425 BROADWAY (MA0022)

425 BROADWAY  
SOMERVILLE, MA 02145  
MIDDLESEX COUNTY



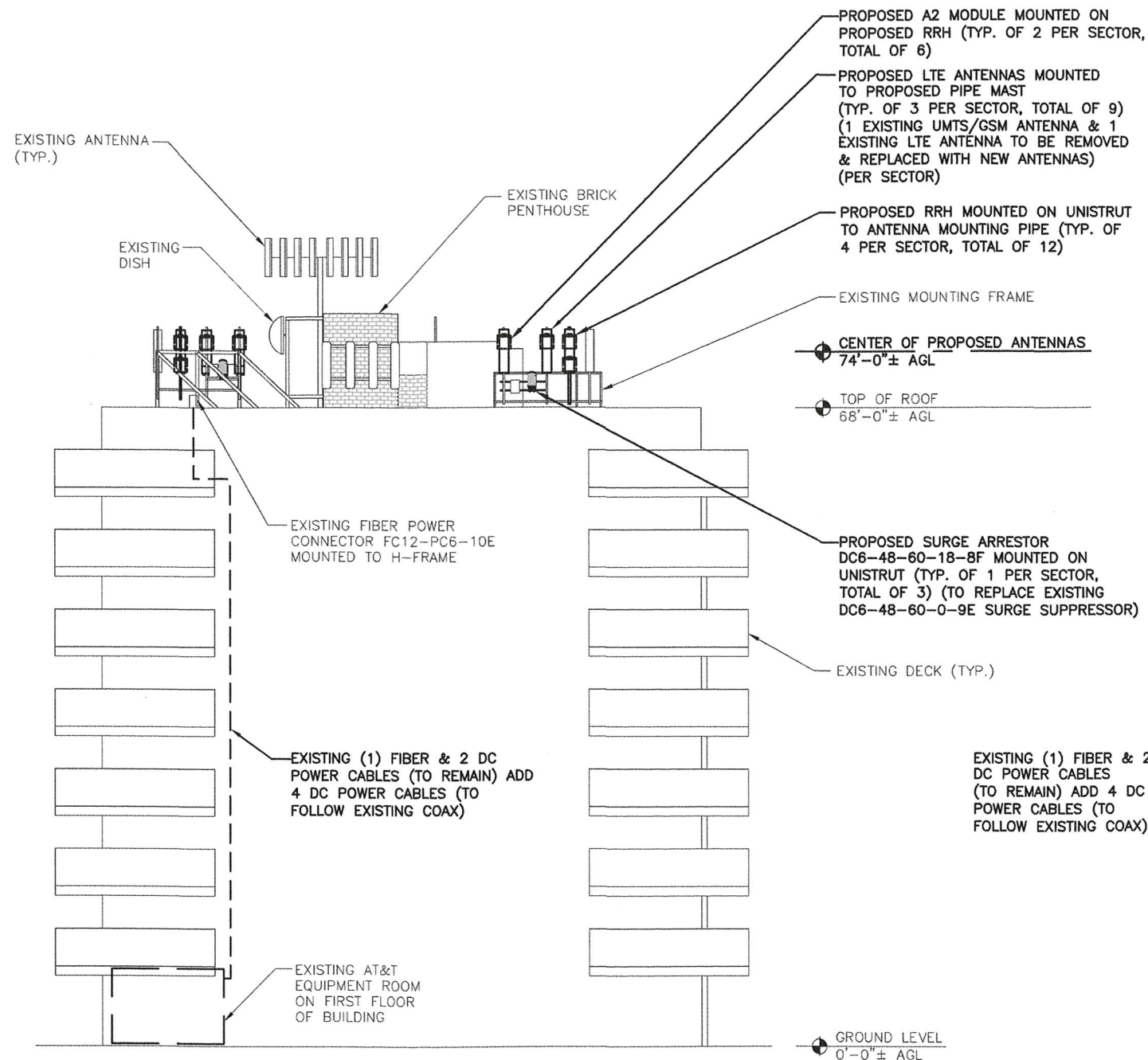
550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

				AT&T			
				COMPOUND & EQUIPMENT PLAN (LTE)			
1	12/20/13	ISSUED FOR CONSTRUCTION	SG	AT	DPH		
A	12/06/13	ISSUED FOR REVIEW	SG	AT	DPH		
NO.	DATE	REVISIONS	BY	CHK	APP'D	JOB NUMBER	DRAWING NUMBER
SCALE:	AS SHOWN	DESIGNED BY:	AT	DRAWN BY:	SG	2231.01	A-1
							REV
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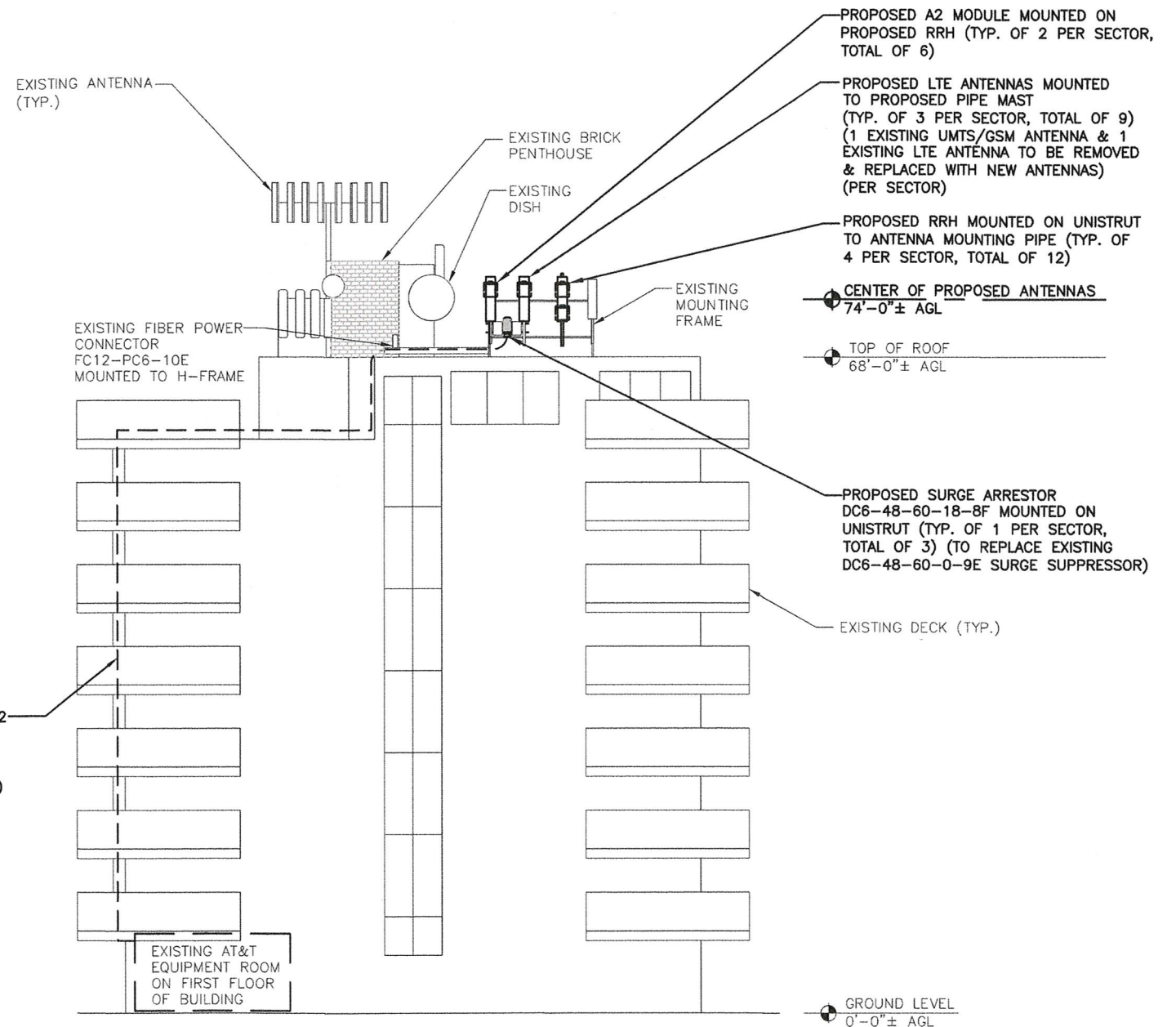


NOTE:  
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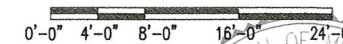
NOTE:  
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**SOUTHEAST ELEVATION**  
SCALE: 1/8"=1'-0"



**SOUTHWEST ELEVATION**  
SCALE: 1/8"=1'-0"



1600 OSGOOD STREET  
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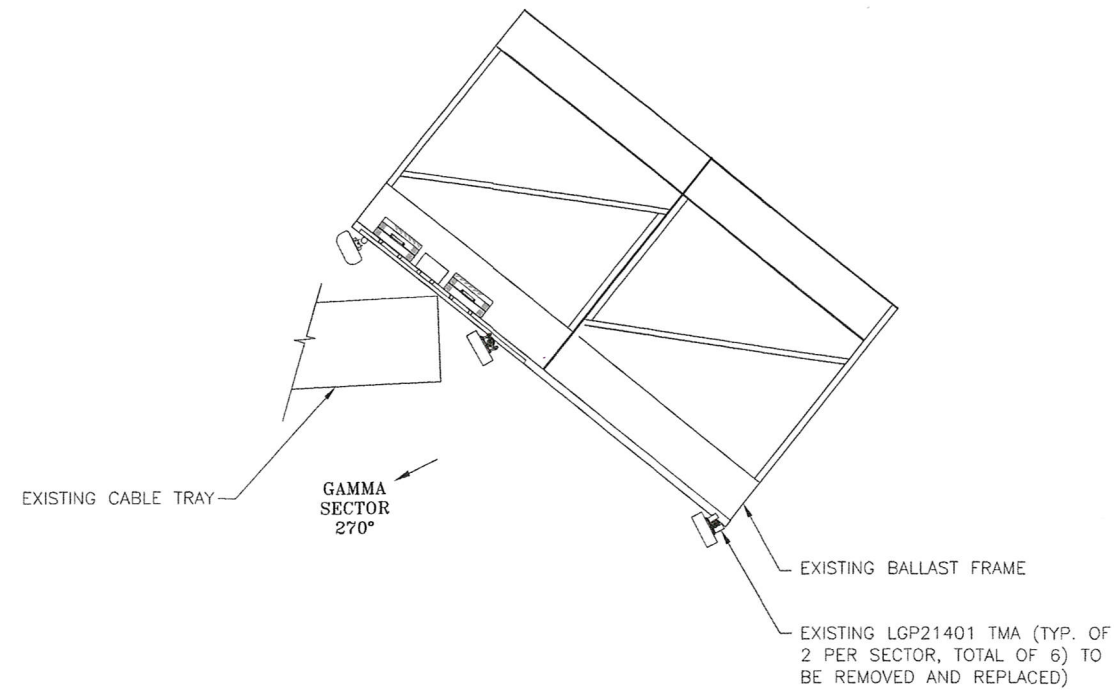
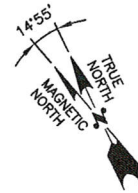
425 BROADWAY  
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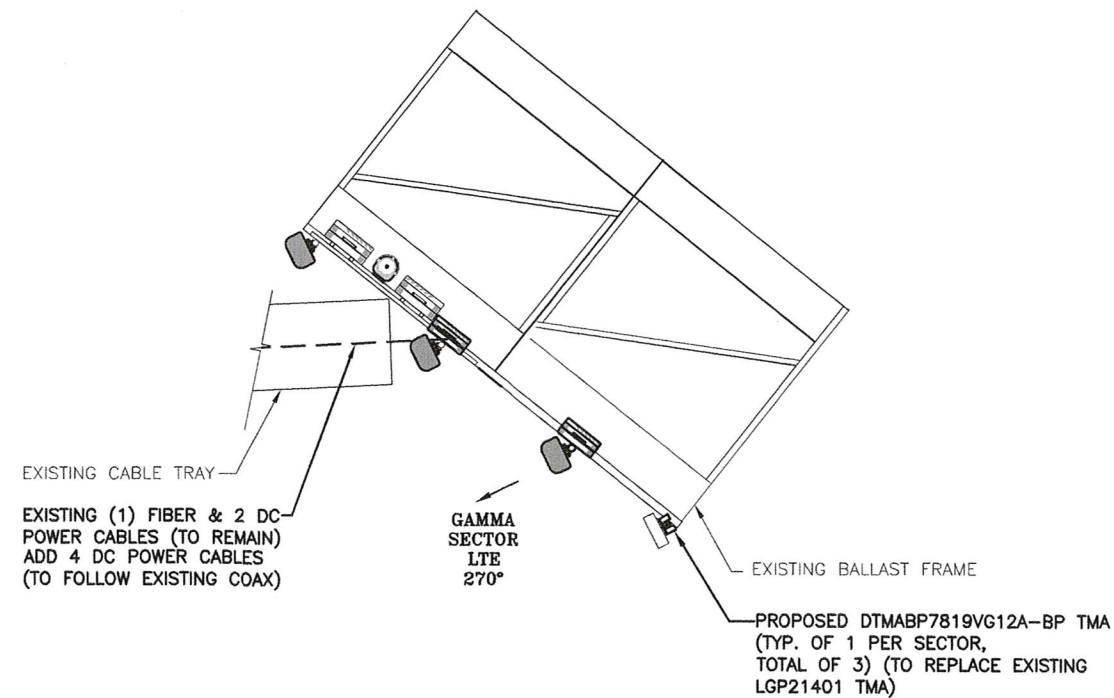
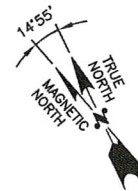
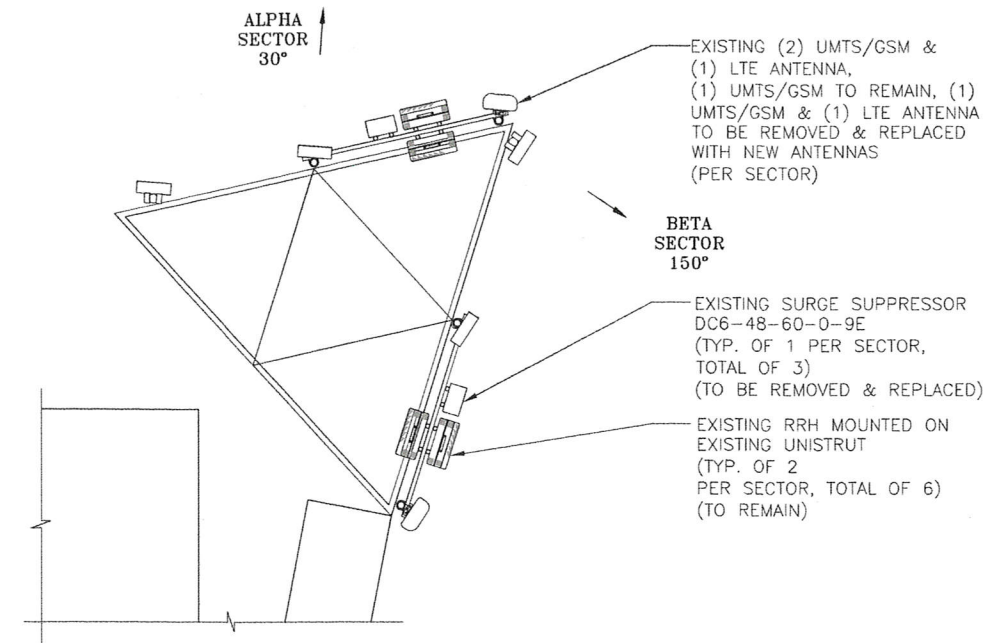
550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

				AT&T			
				ANTENNA PLAN & ELEVATION (LTE)			
1	12/20/13	ISSUED FOR CONSTRUCTION	SG	AT	DPH	JOB NUMBER	2231.01
A	12/06/13	ISSUED FOR REVIEW	SG	AT	DPH	DRAWING NUMBER	A-2
NO.	DATE	REVISIONS	BY	CHK	APP'D	REV	1
SCALE: AS SHOWN				DESIGNED BY: AT		DRAWN BY: SG	

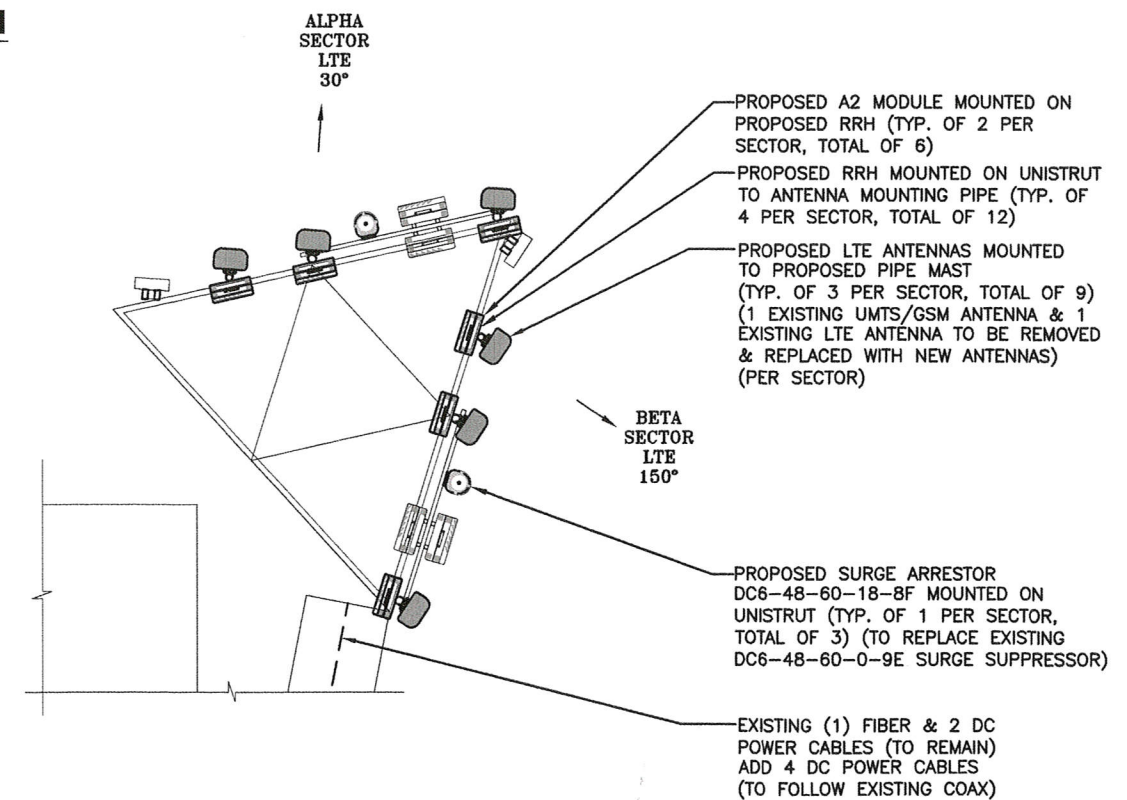




**EXISTING ANTENNA PLAN**  
SCALE: N.T.S.



**PROPOSED LTE & GSM/UMTS ANTENNA PLAN**  
SCALE: N.T.S.



1600 OSGOOD STREET  
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				AT&T			
				ANTENNA LAYOUT (LTE)			
1	12/20/13	ISSUED FOR CONSTRUCTION	SG	AT	DPH	JOB NUMBER	2231.01
A	12/06/13	ISSUED FOR REVIEW	SG	AT	DPH	DRAWING NUMBER	A-3
NO.	DATE	REVISIONS	BY	CHK	APP'D	REV	1
SCALE: AS SHOWN				DESIGNED BY: AT		DRAWN BY: SG	



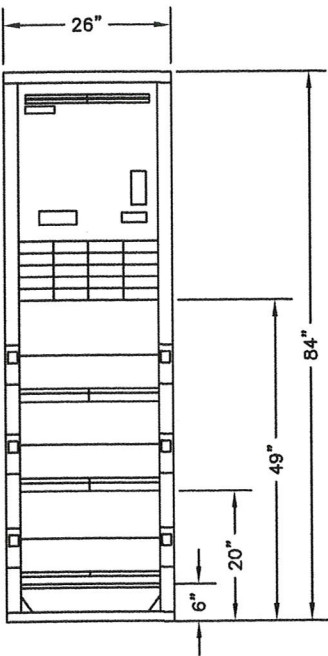
NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

PROPOSED RXAIT  
H80"xW24"xD24"



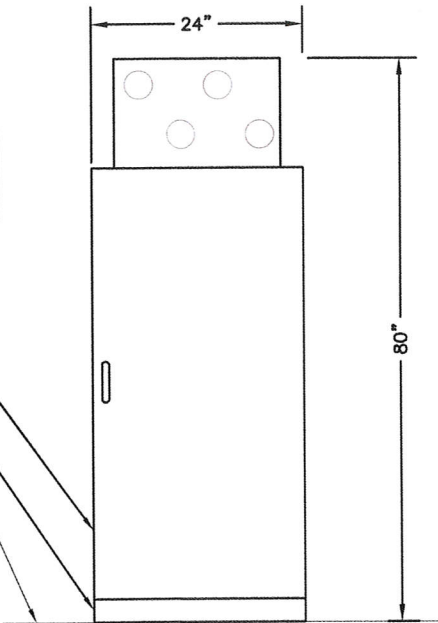
**PROPOSED GE POWER PLANT DETAIL**  
SCALE: N.T.S.

NOTE:  
MOUNT PROPOSED  
EQUIPMENT PER  
MANUFACTURER'S  
SPECIFICATIONS

PROPOSED RXAIT  
H80"xW24"xD24"

PROPOSED  
4" HIGH  
PLINTH

EXISTING EQUIPMENT-  
ROOM FLOOR



**PROPOSED RXAIT DETAIL**  
SCALE: N.T.S.

**Hudson**  
Design Group, Inc.  
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BUILDING 20 NORTH, SUITE 309D  
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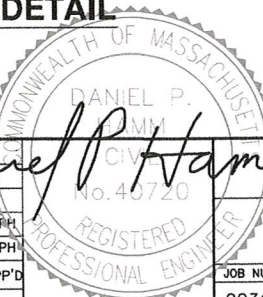
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425 BROADWAY  
SOMERVILLE, MA 02145  
MIDDLESEX COUNTY

550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

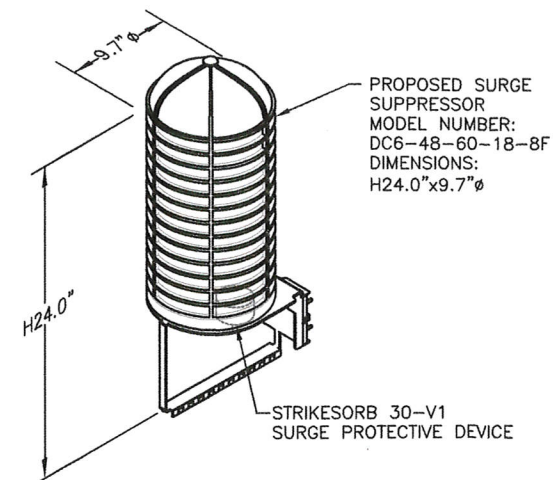
NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/20/13	ISSUED FOR CONSTRUCTION	SG	AT	DPH
A	12/06/13	ISSUED FOR REVIEW	SG	AT	DPH

SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: SG



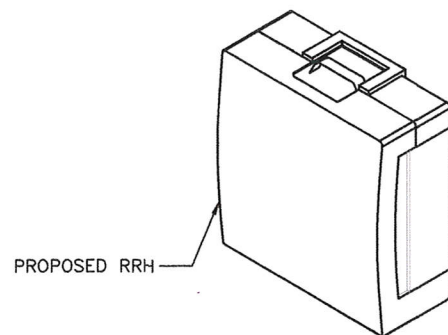
AT&T	DETAILS (LTE)	JOB NUMBER	DRAWING NUMBER	REV
		2231.01	A-4	1





NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**DC SURGE SUPPRESSOR DETAIL**  
SCALE: N.T.S.



NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

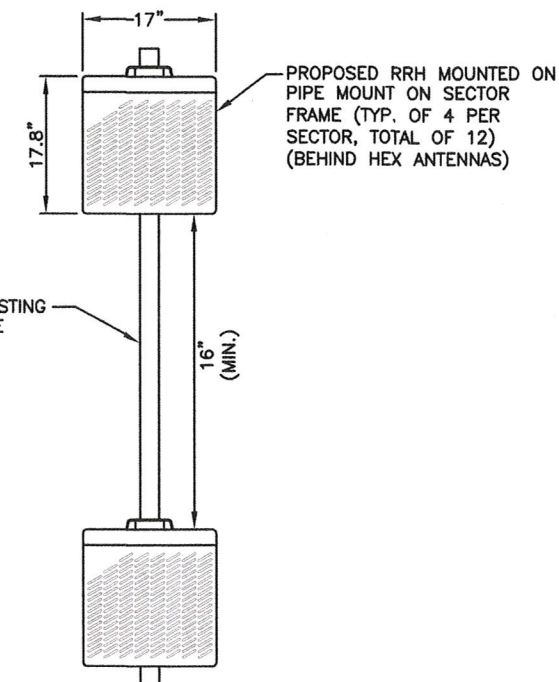
**RRH DETAIL**  
SCALE: N.T.S.

ERICSSON RRH TYPE ASSIGNMENT PER BAND	
BAND	RRH TYPE/MODEL
700 BC	RRUS-11
700 DE	RRUS-E2
850	RRUS-11
PCS	RRUS-12+A2
AWS	1A BUILT IN
WCS	RRUS-32

NOTE:  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

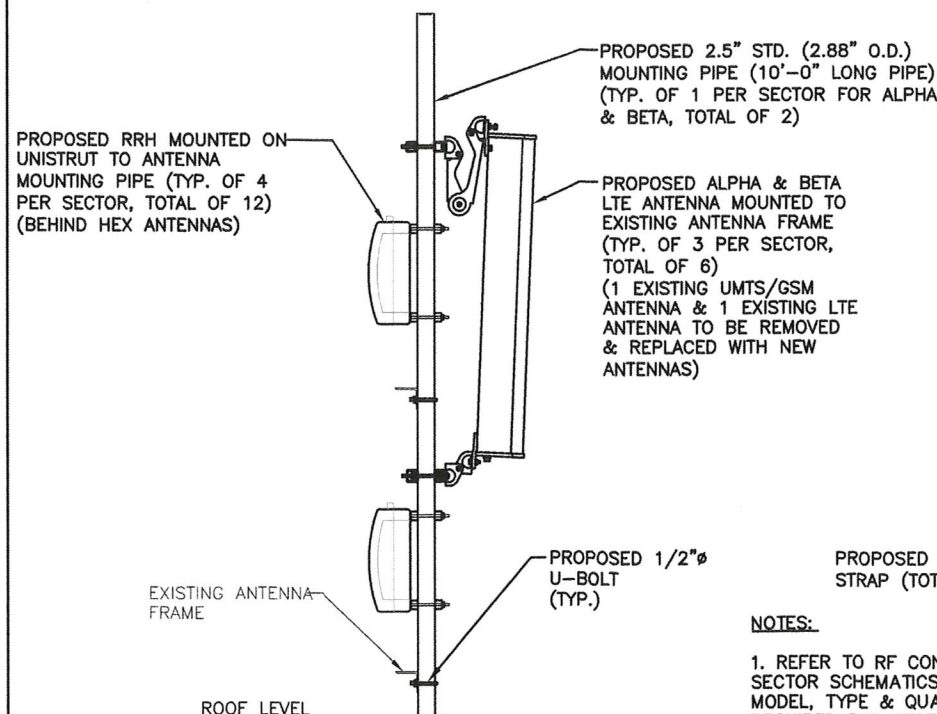
NOTE:  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



PROPOSED/EXISTING MOUNTING PIPE

PROPOSED RRH MOUNTED ON PIPE MOUNT ON SECTOR FRAME (TYP. OF 4 PER SECTOR, TOTAL OF 12) (BEHIND HEX ANTENNAS)



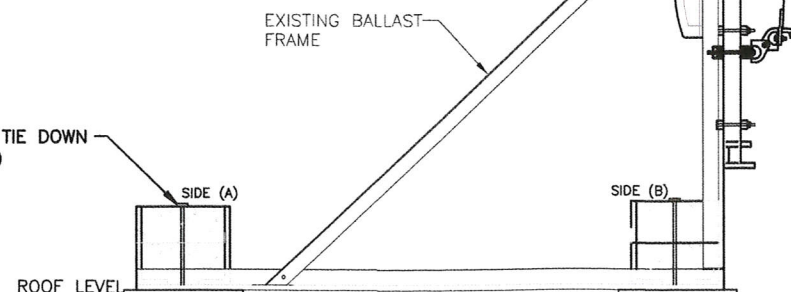
**PROPOSED LTE ANTENNA DETAIL (ALPHA & BETA SECTORS)**  
SCALE: N.T.S.

BALLAST CALCULATIONS	
SECTOR	GAMMA
SIZE OF BLOCKS	T.B.D.
WEIGHT OF BLOCKS	T.B.D.
NUMBER OF BLOCKS (SIDE A)	T.B.D.
NUMBER OF BLOCKS (SIDE B)	T.B.D.
TOTAL NUMBER OF BLOCKS	T.B.D.
TOTAL BALLAST WEIGHT	T.B.D.

PROPOSED GAMMA LTE ANTENNAS MOUNTED TO EXISTING BALLAST FRAME (TOTAL OF 3) (1 EXISTING UMTS/GSM ANTENNA & 1 EXISTING LTE ANTENNA TO BE REMOVED & REPLACED WITH NEW ANTENNAS)

PROPOSED 2.5" STD. (2.88" O.D.) MOUNTING PIPE (7'-6" LONG PIPE) (TOTAL OF 1 FOR GAMMA SECTOR)

PROPOSED RRH MOUNTED ON UNISTRUT TO ANTENNA MOUNTING PIPE (TYP. OF 4 PER SECTOR, TOTAL OF 12) (BEHIND HEX ANTENNAS)

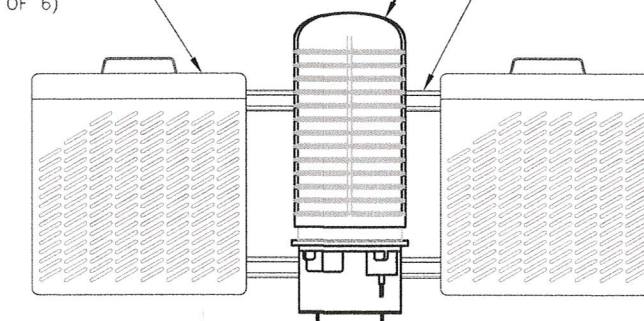


**PROPOSED LTE ANTENNA MOUNTING DETAILS (GAMMA SECTOR)**  
SCALE: N.T.S.

EXISTING RRH MOUNTED TO UNISTRUT (TYP. OF 2 PER SECTOR, TOTAL OF 6)

PROPOSED SURGE ARRESTOR DC6-48-60-18-8F MOUNTED ON UNISTRUT (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REPLACE EXISTING DC6-48-60-0-9E SURGE SUPPRESSOR)

EXISTING UNISTRUT (TYP.)



**PROPOSED SURGE ARRESTOR MOUNTING DETAIL**  
SCALE: N.T.S.



1600 OSGOOD STREET  
BUILDING 20 NORTH, SUITE 309D  
N. ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5585

27 NORTHWESTERN DR.  
SALEM, NH 03079

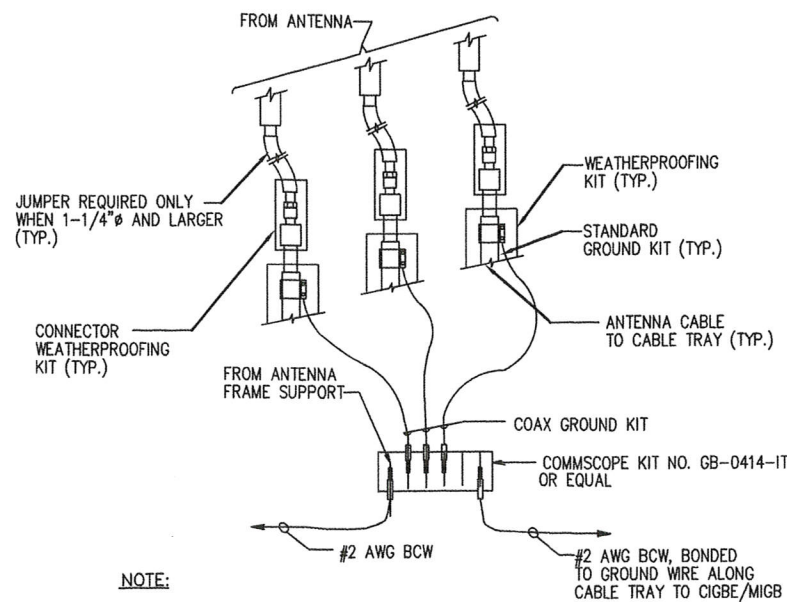
SITE NUMBER: MA2231  
SITE NAME: SOMERVILLE 425  
BROADWAY (MA0022)  
425 BROADWAY  
SOMERVILLE, MA 02145  
MIDDLESEX COUNTY



550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

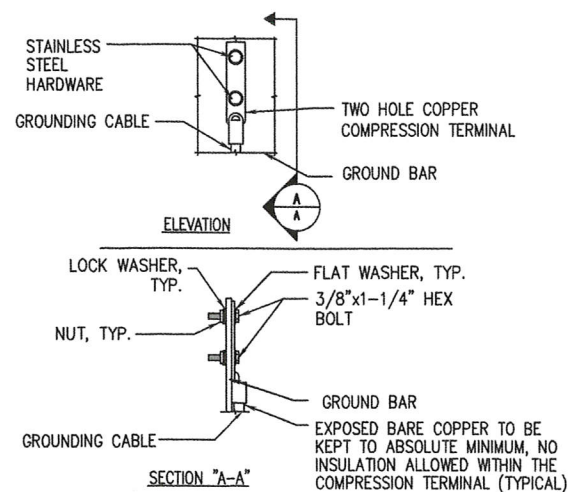
1 12/20/13 ISSUED FOR CONSTRUCTION		SG	AT	DPH	AT&T No. 40720 REGISTERED PROFESSIONAL ENGINEER	ANTENNA & RRH MOUNTING DETAILS (LTE)		
A 12/06/13 ISSUED FOR REVIEW		SG	AT	DPH				
NO.	DATE	REVISIONS			BY	CHK	APP'D	
SCALE: AS SHOWN		DESIGNED BY: AT		DRAWN BY: SG				
JOB NUMBER		DRAWING NUMBER		REV				
2231.01		S-1		1				





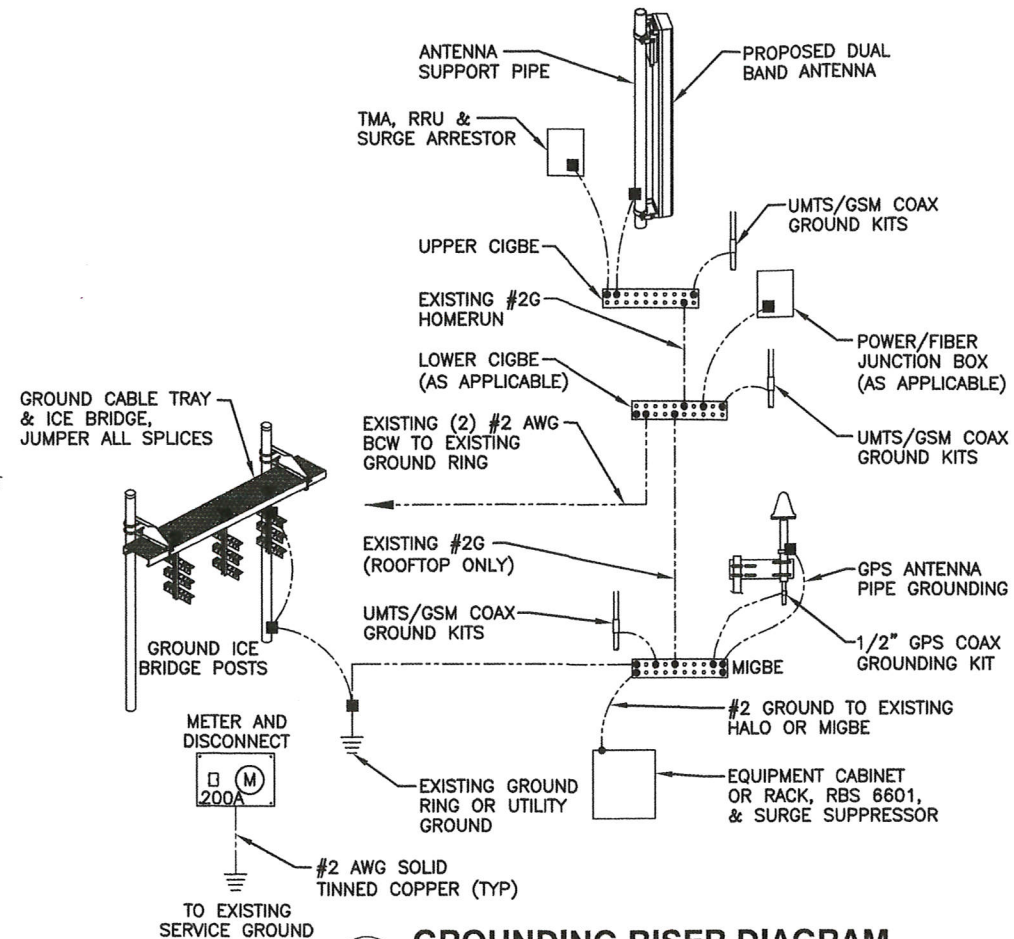
### GROUND WIRE TO GROUND BAR CONNECTION DETAIL

1  
—  
N.T.S.



### TYPICAL GROUND BAR CONNECTION DETAIL

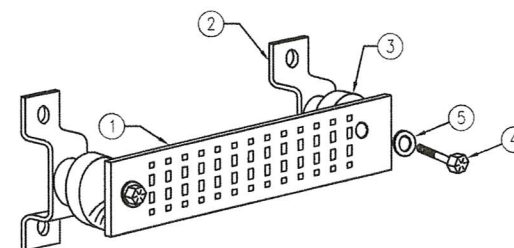
4  
—  
N.T.S.



### GROUNDING RISER DIAGRAM

2  
—  
N.T.S.

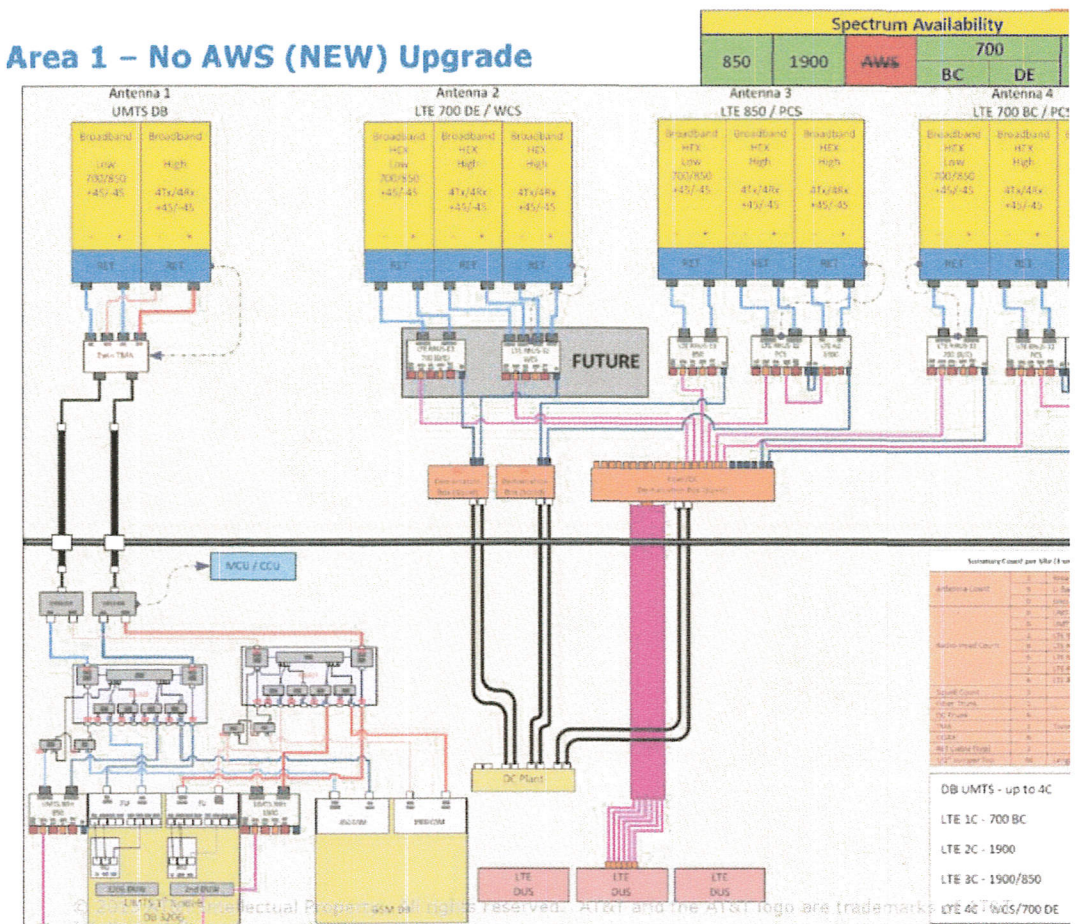
WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
①	1	HLGB-0420-IS	SOLID GND. BAR (20"x4"x1/4")
②	2	—	WALL MTG. BRKT.
③	2	—	INSULATORS
④	4	—	5/8"-11x1" H.H.C.S.
⑤	4	—	5/8 LOCKWASHER



### GROUND BAR - DETAIL

5  
—  
N.T.S.

### Area 1 - No AWS (NEW) Upgrade



### PLUMBING DIAGRAM

3  
—  
N.T.S.

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

#### SECTION "P" - SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)  
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)  
TELCO GROUND BAR  
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)  
+24V POWER SUPPLY RETURN BAR (#2)  
-48V POWER SUPPLY RETURN BAR (#2)  
RECTIFIER FRAMES.

#### SECTION "A" - SURGE ABSORBERS

INTERIOR GROUND RING (#2)  
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)  
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)  
BUILDING STEEL (IF AVAILABLE) (#2)